

CLAIMS

What is claimed is:

1. A vehicular transmission comprising:

a gearbox receiving input and output shafts and containing a plurality of gears for connecting the input and output shafts in a plurality of different gear ratios;

at least one shift fork in said gearbox for shifting said gears in a manner to selectively effect said different gear ratios;

a link mounted on top of said gearbox exteriorly thereof for actuating said shift fork when said link is operated;

a manually operated shift lever mounted at a location behind said gearbox for movement between a plurality of shift positions corresponding to pre-selected gear ratios; and

a linkage extending between said shift lever and said link for transmitting movement of said shift lever to said link in a manner to actuate said fork to effect a gear ratio corresponding to the position of the shift lever, said linkage extending on top of and exteriorly of said gearbox.

2. A vehicular transmission comprising:

a gearbox having left and right sides and receiving input and output shafts, said gearbox containing a plurality of gears for connecting the input and output shafts in a plurality of different gear ratios;

a shift lever mechanism having a manually operated shift lever movable between a plurality of shift positions corresponding to pre-selected gear ratios, said shift lever mechanism having a first mounting position on the left side of said gearbox and a second mounting position on the right side of said gearbox; and

a linkage extending between said shift lever mechanism and said gears in both the first and second mounting positions thereof for translating movement of said shift lever between said shift positions into gear ratios corresponding to said shift positions.

3. A vehicular transmission comprising:

a gearbox having left and right sides and receiving input and output shafts, said gearbox containing a plurality of gears for connecting the input and output shafts in a plurality of different gear ratios;

a top plate for said gearbox on which at least one shift fork and one pivot lever are mounted, said shift fork and pivot lever being connected by a pivot shaft which transmits pivoting of said lever into movement of said fork to effect shifting of said gears to effect different gear ratios;

said top plate being applicable to said gearbox in a first orientation wherein said pivot lever extends on top of said gearbox toward the left side thereof and a second orientation wherein said pivot lever extends on top of said gearbox toward the right side thereof, said top plate being rotated approximately 180° from said first orientation to said second orientation;

a manually operated shift lever for effecting shifting of the gears between different gear ratios, said shift lever having alternative positions including a first

position generally behind said pivot lever in the first orientation of the top plate and a second position generally behind said pivot lever in the second orientation of the top plate; and

a linkage extending between said shift lever and said pivot lever for transmitting movement of said shift lever into pivotal movement of said pivot lever in a manner to actuate said fork through said pivot shaft to effect a gear ratio corresponding to the position of the shift lever, said linkage being applicable to said shift lever and pivot lever when said top plate is in said first orientation and said shift lever is in said first position, and when said top plate is in said second orientation and said shift lever is in said second position.

4. A vehicular transmission comprising:

a gearbox having left and right sides and receiving input and output shafts, said gearbox containing a plurality of gears for connecting the input and output shafts in a plurality of different gear ratios;

a top plate for said gearbox on which first and second shift forks and first and second pivot levers are mounted, said shift forks and pivot levers being connected by pivot shafts which transmits pivoting of said first lever into movement of said first fork and pivoting of said second lever into movement of said second fork in a manner to effect shifting of said gears to effect different gear ratios;

said top plate being applicable to said gearbox in a first orientation wherein said pivot levers extend on top of said gearbox toward the left side thereof and a second orientation wherein said pivot levers extend on top of said

gearbox toward the right side thereof, said top plate being rotated approximately 180° from said first orientation to said second orientation;

a manually operated shift lever for effecting shifting of the gears between different gear ratios, said shift lever having alternative positions including a first position generally behind said pivot levers in the first orientation of the top plate and a second position generally behind said pivot levers in the second orientation of the top plate; and

a linkage extending between said shift levers and said pivot levers for transmitting movement of said shift lever into pivotal movement of said pivot levers in a manner to actuate said forks through said pivot shafts to effect a gear ratio corresponding to the position of the shift lever, said linkage being applicable to said shift lever and said pivot levers when said top plate is in said first orientation and said shift lever is in said first position, and when said top plate is in said second orientation and said shift lever is in said second position.

5. A vehicular transmission comprising:

a gearbox receiving input and output shafts and containing a plurality of gears for connecting said input and output shafts in a plurality of different gear ratios, said gearbox having a neutral condition of said gears;

first and second shift forks in said gearbox each being in a neutral position in the neutral condition of the gears, one of said forks being offset from the neutral position in each of said different gear ratios;

a shift mechanism including a shift lever located behind said gearbox and being manually operable to different shift positions corresponding to said different gear ratios;

a linkage extending between said shift mechanism and said shift forks for transmitting movement of said shift lever to said forks in a manner to effect a gear ratio corresponding to the position of the shift lever, said linkage extending on top of said gearbox; and

an interlock mechanism for locking said first shift fork in the neutral position thereof when said second shift fork is displaced from the neutral position thereof, and for locking said second shift fork in the neutral position thereof when said first shift fork is displaced from the neutral position thereof.

6. A transmission as set forth in claim 5, wherein said linkage extends on top of said gearbox.

7. A transmission as set forth in claim 6, including means for mounting said shift lever alternatively on opposite sides of said gearbox.

8. A transmission as set forth in claim 5, including means for mounting said shift lever alternatively on opposite sides of said gearbox.

9. A transmission as set forth in claim 5, wherein:

said shift forks rotate selectively from the neutral positions thereof to effect said different gear ratios; and

said interlock mechanism is located between said shift forks.

10. A transmission as set forth in claim 9, wherein said interlock mechanism comprises an interlock bar extending between said shift forks and engaging said first fork in a manner locking said first fork in the neutral position thereof when said second shift fork is displaced from the neutral position thereof, and engaging said second fork in a manner locking said second fork in the neutral position thereof when said first shift fork is displaced from the neutral position thereof.

11. A transmission as set forth in claim 10, wherein said interlock mechanism includes:

a first groove in said first shift fork aligned with said interlock bar in the neutral position of said first fork;

a second groove in said second shift fork aligned with said interlock bar in the neutral position of said second fork;

a first camming surface on said first shift fork adjacent to said first groove and acting against said interlock bar in a manner locking said bar in said second groove when said first fork is displaced from the neutral position thereof; and

a second camming surface on said second shift fork adjacent to said second groove and acting against said interlock bar in a manner locking said bar in said first groove when said second shift fork is displaced from the neutral position thereof.

12. A transmission as set forth in claim 11, including:

first and second latch bars located between said shift forks and urged away from one another such that said first latch bar is urged toward said first camming surface and said second latch bar is urged toward said second camming surface;

a first notch in said first camming surface displaced from said first groove at a location aligned with said first latch bar when said first fork is displaced to a first selected gear ratio of said gears, whereby said first latch bar enters said first notch to releasably latch said first fork to maintain said first selected gear ratio;

a second notch in said second camming surface displaced from said second groove at a location aligned with said second latch bar when said second fork is displaced to a second selected gear ratio of said gears, whereby said second latch bar enters said second notch to releaseably latch said second fork to maintain said second selected gear ratio, said first and second notches being situated to avoid entry therein of said interlock bar.

13. A transmission as set forth in claim 12, wherein said interlock bar is mounted slidably to said gearbox at a location adjacent to said first and second latch bars.

14. A transmission as set forth in claim 13, wherein said linkage extends on top of said gearbox.

15. A transmission as set forth in claim 14, including means for mounting said shift lever alternatively on opposite sides of said gearbox.

16. A transmission as set forth in claim 10, wherein said linkage extends on top of said gearbox.

17. A transmission as set forth in claim 16, including means for mounting said shift lever alternatively on opposite sides of said gearbox.

18. A transmission as set forth in claim 10, including means for mounting said shift lever alternatively on opposite sides of said gearbox.

19. A transmission as set forth in claim 13, including means for mounting said shift lever alternatively on opposite sides of said gearbox.